

DRAFT MEETING SUMMARY (v.1)

DRAFT - NOT APPROVED BY COMMITTEE

HANFORD ADVISORY BOARD

RIVER AND PLATEAU COMMITTEE

November 12, 2003

Richland, WA

Topics in this Meeting Summary

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This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.

Welcome and Introductions

Committee Chair Pam Brown opened the meeting and welcomed the committee and guests. She briefly reviewed the agenda and goals of the meeting.

The October meeting summary was adopted.

Monitored Natural Attenuation/Enhanced Passive Remediation

Tyler Gilmore, PNNL, discussed the Monitored Natural Attenuation (MNA) program. Input is being sought on the draft MNA document. MNA is one of the Department of Energy's (DOE's) Office of Environmental Management's (EM-50) Alternative Projects. It is based at the Savannah River Technology center and is funded for three years with a budget of six million dollars. The project is intended to identify opportunities to incorporate recent science and expanded conceptual approaches to encourage appropriate use of MNA. The project will:

- o Provide a scientifically based framework to evaluate MNA.
- o Advance the science and broaden the understanding of MNA and remediation systems.
- o Obtain regulatory acceptance of this next-generation approach.
- o Incorporate this approach into a record of decision (ROD) for SRS.

At the end of the project, a framework for evaluating MNA will be developed along with a technical guidance document. These tools will provide value to and be used by the regulator and end user communities. In parallel with developing and implementing the technical strategy, the needs and concerns of regulators, stakeholders, and end users will be gathered and incorporated into the strategy. This input will be gathered starting in mid 2003 and through mid 2005. The finalized technical document will be ready at the end of 2005. Other products developed during the project will include: a historical survey; a draft technical targets document; technical protocol; and field research for high priority near-term targets among others. A series of workshop will be held to provide an introduction to the project, discuss central scientific themes and technical targets, and to listen to regulator and stakeholder issues.

MNA is appropriate as a remedy when remedial objectives can be reached through natural attenuation in a reasonable time when compared to other methods. This process was begun as a way to address petroleum. The National Academy of Sciences has reviewed these protocols and has identified strengths and weaknesses. All sites have some natural capacity to attenuate contaminants. For MNA to be viable, the attenuation capacity of the system must be greater than or equal to the contaminant input of loading. There are many mechanisms to address the contamination. The question is if these mechanisms can reduce the contaminants enough to meet the cleanup targets. This addresses the concept of mass balance. It is imperative to assess both contaminant loading and natural attenuation capacity. The efficiency of MNA depends on how loading is balanced by attenuation capacity. If the natural system does not have enough capacity it may be necessary to tweak or augment the system.

In utilizing natural or enhanced processes, the traditional approach to remediation is reversed. The problem is approached from distal areas inward to the source. If the capacity of the system is not sufficient, it is necessary to identify what incremental increases in capacity will be required to meet the remediation objectives. MNA is viable if the sum of the various mechanisms is sufficient to attenuate the contaminants and protect potential receptors. Characterization is employed to provide evidence that the attenuation capacity in the system is sufficient and sustainable. Monitoring is used to verify that the attenuation capacity is maintained over time and as conditions vary until the remediation objectives are met. However, actual evaluations of natural attenuation rely on indirect measurements and indicators for each component of the mass balance problem.

The characterization and monitoring phases of MNA can be divided into four phases. These are:

Screening Characterization – conceptual model development, identify major attenuating mechanisms, and identify additional characterization needed to make a decision.

Decision Characterization – system capacity examined, verify processes, determine rates of attenuation, address sustainability of attenuation mechanisms, and evaluate enhancements to attenuation mechanisms.

Process Monitoring (short-term monitoring) – verify/validate remedy, establish baseline, identify indicator parameters, and finalize/augment natural attenuation as needed.

System Performance Monitoring (long-term monitoring) – monitor remediation performance, document response to system changes, confirm baseline mechanisms and rate, incorporate new monitoring methods, and develop a contingency plan.

After these phases are completed, the remediation objectives have been met and no further action is needed.

The high priority targets for the project include:

- Direct measure of attenuation mechanisms. These are biotic, which include bio-assessment tools, and abiotic, which includes resistive fraction.
- Developing long-term monitoring concepts, methods, and tools for MNA.
- Promoting the use of passive to semi-passive enhancements.

MNA will be a part of each remediation activity at Hanford however; the emphasis will continue to be placed on source remediation. It is important that ecological protection and source controls are emphasized when selecting remedial options.

Committee Discussion

- Pam asked if MNA was determined to not be appropriate for metals and solvents. Tyler stated that metals and solvents are not being addressed in this project.
- Tom Stoops asked what it means to meet the remedial action objective and what the application timeline is. Dennis replied this means that focus has been placed on source control. The timeline for application could be several hundred years.
- Dirk Dunning asked if due to the inability to ensure institutional controls, a timeline of 10 to 15 years would be more appropriate. John Price, Ecology, stated Ecology is comfortable that the controls will continue for a long period of time. Comfort means there is some type of financial instrument to provide this assurance. However, he noted that DOE is exempt from providing this financial commitment.
- Greg deBruler asked how a decision was made for the 300 Area when there is no assurance that DOE will still be in existence. John stated it is not valuable to determine why a decision was made. There is an upcoming Comprehensive Response, Compensation, and Liability Act (CERCLA) five-year review of the Record of Decision (ROD) and the regulatory agencies intend to hold DOE accountable for these decisions.
- Maynard Plahuta asked what types of enhanced/passive remediation are being considered. John Morse, DOE-RL, replied the main focus is on chemical remediation however; the natural processes are taken into consideration because there is certainty in how fast materials will decay. It is important to identify how radioactive decay fits into monitored natural attenuation of the site and how it fits into the overall site framework.

- A committee member noted that given the amount of discussion regarding chemicals, chemical application is rare. John stated there is research occurring at H Area to investigate an enhanced way to convert Chromium6 to Chromium3. Tyler added that MNA is the end member of the continuum. A call for proposals has been issued to address some of the enhanced/passive methods. This call was distributed to universities, federal agencies, and the public.
- Tom noted that MNA requires a fine knowledge of the processes that are occurring. This knowledge could modify the conceptual model. He asked if this would potentially drive a characterization requirement. John stated he assumes it would. There is a large amount of work being done involving the carbon tetrachloride model and this may drive further monitoring. Bruce Ford, Fluor, added this is something that needs to be incorporated into the Remedial Investigation/Feasibility Study (RI/FS) process.
- Shelly Cimon asked what the timeframe is for this work. Tyler replied the award will be made in January and then there is an eighteen month research timeframe.
- Several committee members asked if the state would receive financial compensation for natural resource damage caused by the use of MNA. John Price stated he does not believe this is currently under discussion. John Stanfill added that the Nez Perce do not have any immediate plans to discuss financial compensation.
- Greg stated it is important to learn from the mistakes made in the 300 Area. A groundwater strategy is needed to help address these issues, as are requirements for the process. It is imperative that the regulators complete a cost-benefit analysis because natural resources will be irretrievably committed. If this were done, the regulators would find that it is less expensive to cleanup the site. It is the committee's job to make the best-articulated argument possible to promote this idea.
- Dirk stated it is important that all the involved parties come together to talk through the multitude of issues associated with this topic. It is important to look at a project where MNA has worked and one, such as the 300 Area, where it has failed.
- Dennis Faulk, Environmental Protection Agency (EPA), commented the committee should look at the 1100 Area because MNA was successful there. If MNA is done right, it is possible it can be applied to the carbon tetrachloride problem. He added that this might be a topic to address jointly with the Natural Resource Trustee Council.
- John Price, Washington State Department of Ecology (Ecology), added that the five-year ROD reviews are done because new guidance, information, and technology are always being released. A decision that was made five years ago may not have been made today due to the increased data available.
- Wayne Martin, Pacific Northwest National Laboratory (PNNL), commented that this project addresses chlorinated hydrocarbons. There is an established EPA protocol for hydrocarbons but not for metals and rads. At the beginning of the project there was discussion of whether or not metals and rads would be appropriate to include at some point. It possible that in the future the project could be expanded to include those.

The mass balance approach is the appropriate approach for metals and rads. Fluor will be investigating to see if MNA can be applied to the metal problems.

- Pam stated this issue cannot be dealt with quickly. She suggested a half-day discussion during the February committee meeting. Tom, Greg, and Maynard will work on this issue and report back at the January committee meeting.

Regulator Perspectives

- Dennis Faulk stated it is important that the feasibility study be included in the RI/FS process to ensure that the right data is collected. The supporting data is needed because it is otherwise difficult to make the leap of faith. MNA is appropriate for use with the distal plume however it is important to note the nuance of enhanced natural attenuation rather than solely natural attenuation. Dennis added that natural attenuation is not working as expected in the 300 Area and DOE is being asked to evaluate attenuation along with more active alternatives. This evaluation is to be completed over the next two to three years.
- Rick Bond, Ecology, stated that Ecology is revisiting the situation in the 300 Area and that Dennis's comments are an accurate assessment.

Central Plateau Cleanup Strategy

Larry Romine, DOE-RL, discussed the Optimization Strategy for Central Plateau Closure. The strategy is intended to drive development of a comprehensive plan for the remediation of the Central Plateau facilities and waste sites. It will also be used to aid in the development of an integrated, systematic approach to waste site remediation and closure, facility decommissioning, waste disposition, tank farm closure, and groundwater protection.

The strategy is built on existing plans and agreements. It identifies actions that are needed to transform the Central Plateau from its current condition to a post closure care, Long-Term Stewardship condition. The plan defines and captures all the work scope using an area approach. The area approach breaks the site into twenty-four regional zones to help manage the 700 waste sites. Issues are presented in the strategy to help develop a regulatory strategy for early actions that would support acceleration and all the other actions needed to achieve final closure. Gaps within the current Central Plateau Cleanup Strategy are identified in this version. Current gaps include: interdependencies of ancillary facility decommissioning and closure; pipeline/sub-grade structures cleanup and closure; final disposition of key and operational facilities; buried transuranic (TRU) waste and residuals; and final groundwater remedies. The completed plan will develop a priority-based approach for remediation that drives early completion actions on high-risk sites.

The overall objectives of the Optimization Strategy for the Central Plateau are as follows:

- High-risk site actions are completed first

- Shrink the contaminated footprint
- Disposition of buried TRU waste
- Disposition of key facilities
- Closure of tank farm zones
- Long-term operations and infrastructure

Several initial regional priorities have been identified based on the emphasis of high groundwater contamination risk. These are, the U-Plant and B/C cribs and trenches, the Plutonium Finishing Plant (PFP) zone and waste management zone, and the PUREX zone. The use of the zone concept has ensured that all the needed work is captured and that there is ownership of this work.

It will be necessary to refine the strategies and principles guiding acceleration and optimization. This will be done through:

- Reviewing baseline planning assumptions
- Reviewing additional targets of opportunity
- Articulating guiding principles for remediation and closure of the Central Plateau
- Gaining strategic input from Inter-Agency Management Integration Team (IAMIT) work groups and the Hanford Advisory Board (Board)
- Establishing clear prioritization for the timing and sequencing of work scope.
- Incorporating optimized elements into a comprehensive plan for the remediation of Central Plateau facilities and waste sites.
- Advancing Hanford life-cycle baseline.

Larry asked that the Board consider several issues related to this topic. The Board's input is requested on identifying the initial regional priorities. He asked that the Board discuss and identify opportunities for consolidated decision-making and implementation documentation. The Board's assistance would be appreciated in the development of remedial and closure alternatives for pipelines, sub-grade structures, and final groundwater remedies.

Committee Discussion

- Greg asked what the post-2006 transition refers to. Larry replied this is when the Fluor contract ends. At this time, a new contract will be written for the next phase of work, which will address the Central Plateau. It will include everything except the tank farm work.
- Maynard asked if the closure chart will identify items other than rad. Bruce replied the chart is driven largely by the System Assessment Capability (SAC) assessment of risk. This tool was used as the basis for the initial prioritization of these zones. There is currently a RI/FS process that looks at risk priority in greater detail.
- Greg asked if the upcoming risk composite will identify the chemical constituents. Bruce stated Bob Rice would have to address this.

- A committee member asked what the project timeline is. Larry replied that Fluor is focused on the current work scope through 2006. Every year budget submittals are improved upon and requirements are refined. Every effort is made to incorporate the best thoughts possible into the budgets. A better definition and scope is needed for the time past 2006.
- Greg asked if completion of the RI/FS in 2008 is realistic. He added it is important to have a process that engages the stakeholders in a discussion of what an acceptable end state is. Larry replied this is a good point. A large amount of data has been generated but the proactive steps needed to bring it together have not been taken. A better job needs to be done of illustrating how input is developed into a more clearly defined document.
- A committee member asked where the difference is between EPA and DOE. Craig Cameron, EPA, replied that these are recognized as good goals. The difference comes down to specific waste sites and issues associated with timing and how far to proceed in the near-term or long-term. Larry added that the main difference is when the ultimate goal will be reached not if these are good goals.
- Dirk noted that Kevin Leary offered the document to the committee in draft form at the last meeting. He added he is pleased to hear that characterization costs vs. excavation costs are being studied.
- Pam stated the Tri-Party Agreement (TPA) agencies have asked the Board to provide guiding principles for closure, an overview of the process and principles, and priorities of regional zones. The intent is to bring this issue to the February board meeting along with advice.

Regulator Perspectives

- John Price, Ecology, stated there is a document due as part of the Hanford Performance Management Plan (HPMP) in 2006 that will have an identified strategy for post-2006. This will be detailed enough to allow DOE to develop a contracting strategy. Many of the previously noted data gaps have been addressed and specific waste sites are identified for early intervention. This is an optimization strategy and requires that high-risk waste site cleanup is balanced with the availability of skilled labor. While the document does not clearly do this, it is a good start.
- Craig Cameron, EPA, stated that the EPA has a tendency to look at the 200 Area not just as a waste management zone but as available for other uses. It is important that areas are left that can be made into industrial use zones. This came out of workshop discussions from a year and half ago but are meant as only a starting point for discussions.
- Dennis Faulk, EPA, stated that capping was EPA's preference. Under this plan, capping will be done only if absolutely necessary. The plan of remove, treat, and dispose is a fundamental mind shift. Dennis noted the priorities have been the same for a long time. Many of these do not need to wait for the RI/FS in 2008. There is data available to share and a public process is being developed to do this.

M-91 Transuranic Waste Agreement

Matt McCormick, DOE-RL, reviewed the M-91 TRU waste agreement. The agreement establishes a legal framework for moving forward while jurisdictional issues are resolved in court. Ecology has withdrawn its April 30 Administrative Order and DOE has withdrawn its appeal. Contingent milestones regarding treatment/certification of TRU will go into effect if the State prevails in court.

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| M-91-40: Retrieval and designation of contact handled (CH) retrievably stored wastes from the low level burial grounds by 12/2010. | <ul style="list-style-type: none">• 11/15 – start of retrieval, actual start 10/17• All retrieved waste must be removed from the low-level burial grounds (LLBG)• Yearly retrieval milestones established starting in CY04 – 1200 cubic meters by 12/2004• Sampling and analysis plan for each burial ground• Designation of all retrieved waste to WAC requirements• Retrieval sequencing determined by potential risk to the environment |
| M-91-41: Retrieval and designation of remote handled (RH) retrievably stored waste. | <ul style="list-style-type: none">• 1/2011 - Start date• 12/2014 - Completion of non-caisson retrieval• 2018 - Cassion retrieval |
| M-91-42: Treatment of CH waste currently in storage and newly generated waste. | <ul style="list-style-type: none">• Establishes treatment schedules for work-off of mixed low-level waste (MLLW) currently in storage and newly generated waste by 6/2009• After 6/2009 newly generated waste will be treated IAW LDR requirements.• There are contingent milestone requirements for the treatment/certification of TRUM |
| M-91-43: Treatment of RH MLLW and CH large MLLW boxes currently in storage and newly generated RH waste and CH large boxes. | <ul style="list-style-type: none">• 12/31/2008 – designate wastes currently in storage• 6/30/2008 – Treat 300 m3/year of RH/CH large boxes of waste• This is contingent upon milestone requirements for treatment/certification of TRUM. |
| M-91-44: Treatment of RH TRUM and large CH TRUM boxes currently in storage and newly | <ul style="list-style-type: none">• 12/31/2012 – designate wastes currently in storage |

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|---|--|
| generated RH TRU and large CH TRU boxes | |
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Several of the activities required by the M-91 change package have already been initiated including:

- o Retrieval in burial ground 218-W-4C
- o Sampling of the 218-W-4C burial ground vent risers per the Ecology approved
- o Sampling and Analysis Plan
- o Submittal of the Annual Progress Report on RH work activities to Ecology on 9/30/2003

M-91 establishes an aggressive path forward for the clean up of TRU that will meet or accelerate the commitments in the HPMP.

Committee Discussion

- Shelley asked if a new facility will be built for remote handled waste. Matt replied that an existing facility would be modified.
- A committee member asked if any consideration has been given to in-situ vitrification. Matt replied not at this time. He added that the milestones are very clear and that mixed waste must be treated. The intent is to minimize the amount of material handled and to place it in storage as soon as possible.
- Dick asked if there is currently a project to modify T-Plant. Matt replied it is part of the HPMP. However, a better understanding of the Waste Isolation Pilot Project (WIPP) TRU acceptance criteria is needed because those will be the design driver.
- A committee member asked about the status of WIPP certification. Matt replied it will depend on how long New Mexico takes to review the waste documents and the extent of their comments.
- Shelley asked if this lengthened timeline will affect Hanford's ability to send waste there. She noted the facility is filling up with other waste while the remote-handled (RH) criteria are developed. Matt stated there is good capacity through 2015 and that Hanford's waste projection has decreased while the capacity at WIPP has not.
- Dick Smith asked how RH waste will be shipped. Matt stated either by using three 55-gallon drums packaged together or using the CNS 160B, which can handle 10 drums at a time. This is similar to a TRU pack and is approved by the Nuclear Regulatory Commission (NRC).
- Greg asked what the timeline is for addressing the pre-1970 TRU segment of waste. Matt stated that will be determined through the cleanup decisions made by the regulators and DOE. Any waste generated will be handled using the M-16 series. Laura Cusack, DOE-RL, added that M-16-03 requires DOE to submit a work plan for the waste. The plan for pre-1970 waste is due in 2008 and the M-16 plan is due in 2006 so the later plan will need to be updated after the other work has been completed.

- A committee member asked what the volume of pre-1970's TRU is. Laura stated there is a map that shows which burial grounds contain pre-1970's TRU. She added that she has seen information regarding the amounts of plutonium and uranium that has been disposed of in each burial grounds but it does not have trench-by-trench detail. Dennis added that the distribution is about 50/50.
- Laura stated that RH equipment was supposed to be sent with the Battelle shipment from Columbus. The availability of this equipment was one reason the waste was accepted.
- John Stanfill stated the Nez Perce Tribe met with Ecology and Keith Klein, Manager DOE-RL, to discuss this issue. The tribe was told the equipment was the major selling point for accepting the waste. The tribe was led to believe the waste was being sent from WIPP and would help to reduce costs. Matt stated that Columbus had hoped to ship directly to WIPP and because of this all the waste is well documented. It is unlikely that Hanford will have to repackage anything though it is a possibility. The equipment in question is from Carlsbad. The issue is that it may be needed at the Nevada test site to remove a limited number of drums off-site. This is contingent upon transportation approval from California. Matt added that TRU shipments from Hanford to WIPP have ramped up, as has the number of people working on the project. By the end of 2006 the goal is to send 20 shipments per year.
- Greg clarified that the RH characterization unit was sent to the site and now is not working. Laura clarified the site was promised the contact-handled (CH) equipment and this is on site. The site received empty remote handled TRU containers and associated equipment when it received the waste shipment. Max Power, Ecology, added the commitment was when the shipments from Columbus were complete, the containers and equipment would be sent to Hanford. These containers are the 10160B containers however; the site is not finished shipping so they need those containers. Dennis noted that Dale McKinney had hoped the CH equipment could be adapted to the remote handled TRU.
- Pam commented that John Stang, Tri-City Herald, wrote an article discussing the lag of TRU removal from DOE's internal schedule. This is according to the Inspector General's (IG) audit. Matt replied that the IG report lagged in terms of the milestone negotiations with the State. The IG was not privy to the draft change package being developed with the State over the summer. Some of the items on the schedule were not funded because the change package has just been sent to the contractor and money has only begun to shift to cover this work. Responses have been developed to the IG's concerns and the site will either accept or reject those concerns.
- The committee will draft a letter to the TPA agencies to commend a good job done in a difficult situation. Pam will draft the first version and address Gerry's specific concerns.

Groundwater Remediation Update (N, K, D, and H Areas)

Dick Wilde, Fluor, stated that Carbon Tetrachloride was found in the vapor extraction system of trench four. When the vapor extraction system started it was removing 100

parts per million today, this is down to 40 parts per million. The current plan is to run the system for six weeks during the day to move the levels down to 10 parts per million. It is presumed that there will be a rebounding of these levels in the future. The forecasted low-pressure system this weekend will affect the drums after the high-pressure system this week. However, so far, the drums being removed are in good shape. A TRU retrieval project is starting this year, which will involve the removal of 6000 drums during the year. This will be a valuable learning experience.

Pump and treat activities have been initiated in four areas, H, K, N, D, to clean up the groundwater situation. The system will address the source terms, the recharge issues that drive the contaminants to the water, the water itself, and the need for an adequate monitoring system.

The H Area: The pump and treat system has been operating for quite awhile already. At H area chrome6 material was discovered to be a source term. This material was dug up and moved to central storage. There are no known active recharge issues and the pump and treat system is proving to be very effective.

The N Area: Trench 1301 has been dug up and the source term actively remediated.

K Area: Sludge will begin to be removed from K West reactor and K East fuel storage basins in the next two months. These are part of the source but at this time are not affecting water. However these are right along the river and there is a lot of waste here. More than half of this has been moved onto the plateau but there are many other source terms. The major source terms are the liquid waste disposal trenches, water retention basins, and cribs. These are the items that directly affect the groundwater.

In some areas tritium is being found in the groundwater. There is a major source term in the 116-K Trench and this is currently being dug out. A number of new tritium issues have arisen recently. There are increasing tritium concentrations at two wells near the northwest corner of K East reactor, at one well along the east side of K West reactor, and in the groundwater near the northwest corner of the 100-K burial ground. It is important to continue sludge and fuel movements while these source terms are addressed.

D Area: In the northeast portion of the area along the river, a pump and treat system has been activated to intercept a plume that is headed towards the river. Just south of there, a plume is headed down river. The plume has found a way to get between the interceptor wells and the barriers. This is of concern because these areas along the river are salmon nesting grounds. The waste sites and recharge points are being attacked to try and stop this movement. Additional monitoring wells have been added and these may be turned into extraction wells. Rapidly increasing trends have been seen in several of the wells. It appears that water from the treatment system at 100-D is the driving force pushing the waste. The reservoir here was leaking to such an extent that it was drained and repaired then refilled. The leakage at 182-D reservoir caused enough leakage to create an underground mound that pushed the waste into the barrier. After the leak was repaired, the mound dissipated and it seems the plume is heading towards the river. Discussions

are occurring about the possibility of digging up some of the source terms and enhancing the pump and treat system to capture the waste. Another possibility is to inject enough water to recreate the mound and push the waste back towards the barrier.

Committee Discussion

- Greg asked where the material related to well H-411 was buried. Dick replied the material was dug out and moved to the central waste complex. Until the soil is disposed of, the job is not complete. Greg asked what these wells did in relation to the others after the sources were removed. Dick responded that this system is working for the most part. The 183-H storage waste should be completed by the end of the year. The team was able to address the source term and start pumping the water.
- A committee member asked if additional river monitoring has been done due to the proximity of the site. Jane Borgehse, Fluor, replied that PNNL began monitoring this week.
- Dirk asked what the water temperature is in the basins. He noted the temperature affects the leak rate. Dick replied that he is unsure of the temperature but as soon as this presented as a possible issue it was investigated. He reiterated that he intends to be very open about water issues and that if something arises it will be addressed immediately.
- Pam asked if oral histories have been conducted. John replied this has been done and that the next tactic is for the River Corridor staff to remove the extent of the line and take samples along it. There is a hydrant system that sits over the main concentration area that may have sprung a leak. The plan is to move very aggressively to tackle this plume. Jane added that she will be meeting with the fire chief to address removing the main piece of the water system. At this point the fire chief appears supportive of this plan. Dick added that there two pump houses, one of which is a backup. It is possible that one could be taken out of service.
- Maynard noted the water is for more than fire protection. John Morse replied that there is storage on the Central Plateau, which was not previously available. Jane added that more sampling will be done to determine contamination levels and gather additional information. Dick stated it is important to work with contractors to address any emerging issues before they become worse. There will be a great deal of additional data by February.
- Dirk asked if there are many monitoring wells between the highest chromium concentrations and the river. Dirk asked if there will be a need for an additional line of extraction wells in the next six months and if those will reverse the hydraulic gradient in the area. Dick replied this is currently under discussion.
- Pam asked if the burial grounds are finished. Dennis replied that the liquid burial grounds have been finished. The cooling lines are the big concern.
- Maynard noted in the past there was a strong need for a backup water system but this may no longer be needed. Dick replied it is possible all the lines around the reactors

could be taken out of service. Jane stated alternatives to the loops of fire suppression lines are being discussed.

- Shelley asked what the source is believed to be. Dennis replied it has been very frustrating because a source still has not been found. This needs to be studied more extensively.
- A committee member asked what year the reservoir was drained and repaired. John replied that this was done in 2002 and may have contributed to the problem. The contaminants are moving quickly and it is imperative to respond with an aggressive pump and treat system, which will be started shortly.

Regulator Perspectives

- Dib Goswami, Ecology, stated that Ecology is concerned about the Chromium concentrations in the groundwater and would like the pump and treat systems expanded. Additional wells are needed to address this problem. The current source investigations are moving in the right direction. It is important that the direction of the plume is changed. These wells will provide valuable information. Current sampling is providing good data related to the Chromium at the site.
- Debra McBaugh, Washington State Department of Health (Health), asked if the river data has provided any information related to tritium. Dick stated chromium is present in diffuse plumes throughout other areas of the site. It will be interesting to see if HF8 outlines an approach for dealing with this.

Work Planning: February Board Meeting

The committee discussed possible topics for the February Board meeting as well as the structure of presentations.

Pam noted that Larry Romine identified several items he would like feedback on. This includes bringing together the ideas from the IAMIT work groups and the perspectives of the Board. It is important to develop an end objective. She noted that Larry suggested a joint workshop might be worthwhile. Dennis added it is important for the Board to understand what is going on and that it would be useful to get down into some of the weeds.

Greg commented if a presentation is done on U zone it is important to understand where the breakpoint is on the surface map zones. Gariann Gelston added it is also important to understand what similar processes tie together different zones.

Shelley noted that cleanup will be based on type. Therefore it is fundamental that everyone understands the terminology. It is imperative that the discussion is structured in a way to help solicit input.

Several committee members noted that additional time is needed for the February Board meeting. It was suggested that the executive committee discuss either adding half a day on Wednesday, working until 4pm on Friday, or adjusting the way advice is addressed to tighten up the schedule. Several members added that it does not make sense to not have the December Board meeting.

Handouts

- River and Plateau Committee Meeting Agenda, November 12, 2003.
- Optimization Strategy for Central Plateau Closure, DOE-RL, November 12, 2003.
- WMP-18061 Revision 0 Draft A, November 12, 2003.
- Central Plateau Remediation/Closure Planning Principles, Nick Ceto, October 17, 2003.
- River and Plateau Committee Agenda Items Aligned with TPA Priorities, November 4, 2003.
- Monitored Natural Attenuation and Enhanced Passive Remediation for Chlorinated Solvents, John Morse, DOE-RL, and Tyler Gilmore, PNNL, November 12, 2003.
- M-91 Change Package and Settlement Agreement, Matt McCormick, October 2003.
- Hanford River and Plateau Committee Meeting, Dick Wilde, Fluor, November 12, 2003.

Attendees

HAB Members and Alternates

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|-------------------------|-----------------|-----------------------|
| Pam Brown | Gariann Gelston | Tom Stoops (by phone) |
| Shelley Cimon | Maynard Plahuta | Dave Watrous |
| Greg deBruler | Richard Smith | |
| Dirk Dunning (by phone) | John Stanfill | |

Others

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|------------------------|-----------------------|----------------------------|
| Laura Cusack, DOE-RL | Rick Bond, Ecology | Liana Herron, EnviroIssues |
| Matt McCormick, DOE-RL | Dib Goswami, Ecology | Penny Mabie, EnviroIssues |
| John Morse, DOE-RL | Fred Jamison, Ecology | Jane Borghese, Fluor |
| Larry Romine, DOE-RL | Max Power, Ecology | Bruce Ford, Fluor |
| Margo Voogd, DOE-RL | John Price, Ecology | Andrea Hopkins, Fluor |
| | Craig Cameron, EPA | Dick Wilde, Fluor |
| | Dennis Faulk, EPA | Barb Wise, Fluor |
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| | | Tyler Gilmore, PNNL |
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| | | John Stang, TC-Herald |